with livers enlarged nearly to the pubes from passive congestion in heart cases, and cite this congestion and enlargement as an etiological factor in a subsequent cirrhosis.

I wish to express thanks to Dr. H. P. Hill, and Dr. R. B. Tupper for their aid in the direction of the study of these cases.

UNCOMFORTABLE BABIES.

By LANGLEY PORTER, M. D., San Francisco.

The uncomfortable baby presents one of the most trying problems that the clinician has to face, for when the infant is in distress, the whole family becomes neuresthenic and the trials of the attending physician are numberless.

It is unfortunate that too often our views of the cause of discomfort in these little ones, are limited to the digestive tract; and even in this field, to disturbances of gastric and intestinal digestion, while as a matter of fact the underlying root of the disturbance may be in an entirely different area.

It might be well to divide these babies who show discomfort into groups. First, there is the great group of the breast-fed, as opposed to the second group of artificially nourished babies. In order to consider the breast-fed more in detail, it would be well to subdivide chronologically into the periods of early infancy and middle infancy,—that is, respectively, from the first day to the end of the fourth month, and from the end of the fourth month to the end of the tenth month. Bottle-fed babies can be grouped in the same way, but a third group should be added which we will call the group of later infancy,—that is, from the tenth to the sixteenth month.

The causes of discomfort in the first group of the breast-fed are, for the most part, due to errors or neglect on the part of the attendants. At this time, with these babies digestive disturbances are less frequently the cause of discomfort than are one or another of the causes which have nothing to do with stomach or intestines. These causes that should be sought for may be in the environment of the baby, for instance, it is a very frequent experience to be called to see a child in its first week who is the subject of a fit of uncontrollable crying, and after having assured ourselves that the cause is not a serious one, to order the child out of its baby clothes, have it wrapped in cotton-wool, to see it immediately cease crying and go to sleep. The ordinary clothes designed for the covering of an infant certainly reflect no credit on human intelligence. The tight, inelastic belly-band, with its innumerable windings, alone is the cause of much suffering, and I have seen more than once, the axillae of infants excoriated by the hard seams of ill-fitting petticoat and dress sleeves. Aside from the fit of the clothing, its excess may cause a good deal of discomfort to the baby, for while an infant needs to be maintained in a state of warmth, an excess of heat is most distressing to it.

A not infrequent cause of discomfort lies in the use of a feather or other soft pillow for a mattress. The little one placed on such a support, or rather lack of support, is twisted into all sorts of strained positions, and many a whining, weary child is changed into a happy, normal baby by the simple expedient of replacing such a pillow by a little hair mattress. The pillow for the infant's head, is, also, a source of much discomfort. It is usually much too large, and, in many instances, so soft that it is divided by the baby's head with the result that the child's face and ears are buried in soft down, whereupon head-sweating with its attendant irritation develops. The best pillow for a little baby is made thin and is composed of hard packed hair, or better still, one or two thicknesses of sadler's felt.

It is needless to call attention to excoriation of the buttocks as a cause for distress. I am sorry to say that a great many more babies come from obstetrical hospitals with excoriated buttocks than should. More and more, I am convinced that the physician who does not pay attention to minute details when dealing with infants does himself and his patient much wrong. I have come, of late years, to insist on seeing the diapers of babies changed whenever I am in attendance, and it is really astonishing how neglectful many mothers and nurses are of ordinary cleanliness. Another cause of crying, commonly overlooked, is phimosis, the existence of which is a reflection on our profession, for if every male baby as should happen, underwent a retraction of its foreskin during the first three days of life, there would be no such thing, and a great many babies that now cry would be still. Phimosis, however, is not the only cause of pain that arises from the urinary tract of children. It is a very common occurrence to have young babies pass small concretions of uric acid, and in such instances the careful examination of the diaper will reveal bright, blood-red spots, the result of uric-acid stain. Even without such concretions, concentration of the urine or high acidity will often irritate and worry a baby sufficiently to make its crying almost intolerable to the family. Under such circumstances, the use of rectal injections of sodium carbonate, or normal salt solution, an ounce or two four or five times a day, coupled with free exhibition of water by the mouth will alleviate the trouble.

A rare cause of crying, amenable to the same kind of treatment, especially if it be combined with hypodermoclyses, is so-called pseudo tetanus of the new born. This used to be considered true tetanus neonatorum and was thought fatal, but we know now that it is merely the result of drying out of the tissues in very early life with a resulting increase of muscular tonicity and electrical response such that the picture closely mimics true tetanus. These children are exceedingly uncomfortable and cry almost continuously, and any attempt to handle them only adds to their misery; yet it is astonishing with what rapidity and completeness they respond to a saturation of their tissues with fluid. In many of these cases it would seem that sepsis lay at the bottom of the trouble, for often we find infections of the umbilical stump and even in the absence of this picture of pseudo-tetanus, such infection is by no means an uncommon cause of pain in the new-

born and should always be sought for before deciding that a baby is crying because of the belly-ache. It is sometimes believed that there must be a great deal of pus and much reddening of the surrounding tissues for an umbilical infection to be of any importance, but as a matter of fact, the infection which is evidenced by a moderate reddening, little pus, and a scant watery discharge is the one that seems most distressing.

Another cause for crying in early life which is frequently overlooked is the presence of a hernia, and the usual method of trying to restrain an umbilical hernia is hardly a less potent cause of discomfort than the hernia itself. The time is rapidly approaching when no one will use a button and pad with pressure for this purpose, any more than they will use the hard unyielding, quickly outgrown truss-makers' truss in order to retain inguinal herniae in infants.

The ear is such a frequent cause of pain in babies that it seems hardly necessary to call attention to it. The babies who have earache, however, can hardly be called uncomfortable babies for their distress is so potent and their cries so piercing that the presence of the ear trouble is rarely overlooked. Nevertheless, the usual underlying cause for earache in babies, the adenoid, is little thought of; and yet, not only is it the progenitor of ear abscess, but it, in itself, is the cause of much sleeplessness, irritability, and of many uncomfortable hours. Its presence often so interferes with the infant's meal at the breast that the baby goes on a strike and refuses to take food at all, or its meals are so disturbed that it develops indigestion and the train of discomforts and ills that follow in the wake of indigestion.

However, before discussing indigestion in the young baby as a cause of discomfort, I would like to call your attention to what I consider the commonest cause of crying and distress during the first three-fourths of the first year,—that is a fissure in ano. During the last five years, quite a third of all the children that I have been asked to see in consultation supposed to be suffering from colic or indigestion have had this condition, either independently, or accompanying some digestive disturbance. It is not necessary for the fissure to be very recent, or for the rectum to be much inflamed. The presence of the fissure very often gives rise to a marked hypertrophy of the sphincter, a condition often accompanied by spasm. Such babies give all the clinical signs of colic, drawing up of their legs, hard distended abdomen, and the saturnine smile, and all the other evidences of chronic distress. An experience as resident physician in a hospital for rectal diseases has led me to believe that the pains accompanying fissure and spasm of the sphincter and other acute and subacute rectal irritations are not exceeded by any other pains wthin the range of human experience.

Very recently, while watching Dr. Yerington's investigation of lues in children undertaken in our clinic, I have been impressed with the possibilities of inherited lues as a cause for distress and crying in babies, not only in those babies who show florid signs but in that other class which has little or no skin manifestations and which produces, in later childhood, the cases of tardy syphilis. Such a case was that of an infant who was brought because of discomfort, crying, and lack of gain. The child was reputed to have weighed nine pounds at birth, I saw it at four months, when it weighed less than ten. It had a very fine pale skin, with an abundance of hair, not the least sign of rash or other lesion. The complaint was that the child refused to gain, and was constantly uncomfortable at night, while fairly quiet during the day. There was no vomiting, a daily stool which was well-digested, smooth and yellow. The most careful consideration of energy needs which were abundantly supplied, produced no resulting gain in weight. Without much expectation of result, for the father, a thoroughly reliable man, had denied syphilitic infection, a Wassermann test was made. The report was triple x positive. Kept on the same food as before, the child gained 2 ounces a day after the injection of 1/30 gm. of salvarsan into the vein, and this improvement in weight was accompanied by a complete cessation of discomfort and a steady progression of the child towards health and comfort.

Of course, in spite of the numerous causes for discomfort which may be overlooked in the belief that all discomfort arises from errors in digestion, it still remains true that the greater part does arise from this cause; and in the case of the breast-fed infant, it is sometimes difficult to be sure whether or not overfeeding or underfeeding is the trouble. However, in my experience, it is rarely the latter. It is unfortunate that the older teaching as to the number of meals a child should have from the breast, while abandoned everywhere else in the civilized world, is still predominant here. Instead of wondering that so many children are uncomfortable when receiving ten breast-feedings a day, we should wonder that any do well, for there is no doubt that much discomfort arises from this frequency of feedings. It is a well demonstrated fact that the constant irritation of the breast so alters the breast milk that it becomes uncertain in composition, often higher than it should be in fat, and sometimes lower. Furthermore, the constant disturbance of the mother wearies her, and if one fact is well demonstrated, it is that the tired or over-wrought woman cannot secrete healthy breast milk. Variot, in his classical work on the nursling, states that whenever a wet-nurse in his hospital for sick children had a night disturbed by an upset in her own child, that invariably, the child she was foster-mothering had an acute digestive upset with discomfort. It is especially true here in California that women are readily excited and wearied, especially women of the Jewish race, and very many babies who are the victims of pain and distress can be saved that discomfort by insuring tranquillity, diversion, and a full night's rest to the mother, and on the plan calling for ten feedings in twenty-four hours, this is utterly impossible with a result that the milk disagrees and the worried baby further disturbs and distresses its mother, and the vicious circle so

set up produces as an end result, early loss of breast milk and the necessity of resource to artificial feeding.

Furthermore, I feel that there has crept into our management of babies a very vicious practice, and that is the over-regularity that is so often insisted upon. In hospitals where there are a number of babies, as a matter of necessity, one must have regular feeding hours; but in the average home, with the average intelligent mother or good nurse, it is not good practice to attempt this regularity, and it is far from wise to wake a child in order to feed it. If we insist upon a minimum interval between feedings of 2½ or 3 hours and allow the baby to feed when he will and sleep when he will, he usually will provide himself with five or six meals in twenty-four hours, rarely with seven; and his progress will be steady and his life a comfort to himself and his family.

Underfeeding from the breast is usually evidenced by whining discomfort, while the baby who seems to be urgently hungry, crying and shrieking, rolling his head from side to side, waving his hands and legs and often chewing on his fingers until they and his lips are sore, and who gives the impression to his attendants of intense hunger, is most often not at all hungry; but is suffering from an acute indigestion, probably a hyperchlorhydria leading to heartburn, which his little brain can only interpret as hunger. The really hungry child is rarely insistent. However, without doubt, there are certain cases in which the child receives insufficient food in such form that it gives rise to flatulence and green stools and much distention of the abdomen, blueness about the lips, and sleeplessness. This condition is difficult to tell off-hand from overfeeding. But if one will make it a practice in such cases to weigh the child before and after the nursing, it is a very easy matter to determine whether the little one is getting enough food or not.

A breast-fed baby should get about 1/50 of its weight at a feeding, or a little more than 1/10 of its weight in food during the twenty-four hours. This rule was laid down by Apert and seems to be a very useful guide when we are in doubt as to the sufficiency of the daily ration from the breast. Presuming that a baby is getting an insufficient breast ration, less than 1/50 of its weight at a meal, it is not even then indicated to wean the child. Modern practice dictates that the time of nursing should be limited, that both breasts should be used at each nursing, and that the child be offered the bottle at the end of each period of breast feeding. Formerly we allowed two or three nursings a day and gave two or three bottles, but this plan is much less satisfactory. It is well, however, to omit night nursings and let the mother have a good ten hours sleep, for on this sleep the grade of the breast milk very largely depends. Also, one might interject that there is no better way to increase the quality and amount of breast milk than by giving the mother a course of freshly made Blaud pills with or without laxative as her need dictates. As to what should be put in the bottle, used to augment the breast feedings, that will vary with the physician's preferences. Personally, I like a whey cream mixture, making it from 2% to 3% fat, and about 6% sugar, milk or malt.

No matter how earnest we are in our attempt to maintain the breast milk, there will be many cases in which this is impossible, and many others in which we will find babies who have been put on formulae by nurses or mothers without our consent, and who are become intolerable burdens because of distress consequent on indigestion. In a considerable experience, having seen a great many babies fed by a great many men on a large variety of formulae, I have come to the conclusion that the feeding an infant with a formula too high in fat is the commonest error; and next to this comes the too early feeding on a cereal decoction. The supposition that was formerly generally accepted that the ingredient of milk most difficult to digest is the casein is undoubtedly an error. However, it is equally undoubted that there are cases in which a fault in casein digestion occurs and renders the child most unhappy. But these cases are so infrequent, that in looking over my work for the last few years, I can recall not more than half a dozen. The distress from fat is so frequent that I will detail the case of a baby prematurely born at the 8th month which weighed 6 lbs. It was breast-fed for about 10 days when the milk failed. It was then given a weak dilution of milk, cream and water with sugar of milk, fat about 2%, and did fairly well, gaining one-half pound in a week. The attending physician then attempted to increase the strength of the mixture and the child began to cry and kept on crying practically without ceasing day and night. Malted milk was tried and seemed to make the condition worse. A return was made to a milk formula in which malted milk was used in place of milk sugar. While there was some improvement the child was still unhappy. Various changes were attempted and I saw the child first in its 7th week, when it had a weight of but a few ounces more than its birth weight. The stools seemed to be fairly well digested, homogeneous and rarely green. My first thought was that we were dealing with one of the rare cases of proteid intolerance, but on a whey cream mixture with 2% fat, the child was even more uncomfortable than it had been before and yet this mixture is one that, properly used, will restore comfort to most young babies suffering from indigestion, and has been successful in at least 8 out of 10 cases in which I have used it. I would say in passing, however, that in the beginning of such a feeding, it is better to use whey without any cream for 24 hours and on the second day use 1% fat, the third, 1½% and come to 2% fat on about the fourth day. This 2% is the limit of tolerance for most uncomfortable infants. In a few instances the fat may be increased up to 3% or 3½%.

But to return to the infant we were discussing, she was tried on 1%, then on ½% and then on ¼% fat, always with distress. Finally, we came to use skimmed milk in 1/3 dilution with milk sugar. Now, this, of course, is not a food that

will supply the growth needs of a child, nor yet its energy need, and with some hesitation we added a mixture of dextrin and milk sugar used for feeding older children. Fortunately this was well tolerated, and under this feeding the child immediately became comfortable and began to sleep as a child should, 14 to 16 hours in 24. However, she only maintained her weight and did not gain. An attempt was made to increase the fat, and about ⅛% fat was added in the form of cream, and the discomfort that ensued was extraordinary. Fortunately, these children tolerate carbohydrates pretty well, and we are getting a small gain by using an increased amount of the dextrin milk sugar mixture and milk up to the concentration of about ½, that is, one part of milk to one part of diluent. For most babies this is not rational feeding, but in this case it is rational.

There are a number of histories in our case books which parallel this, but to show how empirical the matter of feeding is, while feeding this baby I was called to see another, in which the case history so far as I could make out was identical with this one save that the child was not premature, weighed 9 lbs. at birth and had gained 2 lbs. in its first 6 weeks and had been uncomfortable for only 2 weeks. There was here a history of undoubted overfeeding with fat with the characteristic signs. The success of the feeding outlined above led me to try it in this instance with a result that the bad conditions were very much exaggerated. We then used the whey cream, beginning with 1% and running it up to 2% within 48 hours; since that time the child has gained steadily in weight and has had no distress whatever until the mother attempted to increase the fat, abruptly running it up to 3%, when the whole array of symptoms returned. However, after 24 hours on the 1% it became comfortable and will go along well on a 2% or 2½% whey cream mixture.

A detail of some importance in the preparation of whey cream mixtures might be mentioned here. If the ordinary 4% dairy milk is put in a quart bottle, and the cream allowed to rise, the first 6 oz. removed with a Chapin dipper will contain 16% of fat, 1 oz. of this in a pint, that is added to 15 oz. of whey, will make a 1% fat mixture, 2 oz. to 14, 2%, and so on.

Another common origin of distress at this age lies in the formula that calls for an excess of starch or sugar. The latter most frequently is one in which sweetened condensed milk is an ingredient, and the former, one in which a food of the cereal type is used. Both of these errors in regimen lead to chronic distress of moderate degree very often accompanied by vomiting of sour, watery material from 1 hour to 2½ hours after a meal. Such formulae, too, often give rise to fermentative stools with excoriation of the buttocks and of the anal canal; irritation and inflammation of the latter may take place and be a cause of much discomfort even when the skin of the buttocks is sufficiently tough to resist excorciation there.

In mid-infancy and later infancy there is a very common disturbance of bottle-fed children which shows itself in extreme constipation with fecal masses, which when passed, are characterized by nurses and mothers as "like marbles," very white or perhaps putty-like. Occasionally, when very rich milk is used, these masses will be greasy, crumbly and with the foul odor of fatty acids. Children with this form of constipation are restless, cry easily, do not sleep well, and very many of them have the habit of sleeping on their knees with their nose buried in the pillow. The cause of this is, invariably, the same thing; a larger amount of milk than the child can digest properly. The constipation is the result of soap formation when the high fat milk is used, and there is also present a lot of free fatty acid. The indication here is to reduce the amount of milk, increase the amount of carbo-hydrate. Usually, it is preferable to make this carbohydrate increase in the form of dextrin if need is shown before the 10th month. After this, it is probably better to use cereal gruels, with eggs, fruit pupls, and meat juices to replace part of the milk. In this connection, it is well to emphasize the fact that at no age does a child need more than 32 oz. of milk in 24 hours, and that from the 10th month on, 5 meals a day is as many as a child should have; further, that when a child's energy needs require as much as 32 oz. of milk in 24 hours, it is high time that it was receiving a diet augmented by such things as cereals, zwieback, meat juices, eggs, and so forth.

At the age in which the picture just detailed is common, one also encounters a good deal of discomfort and a great many babies who cry because of bone or muscle tenderness. The picture we have just been considering, may be, and probably is, one of the early stages of rickets, but slight degrees of rickets with mal-nutrition are not at all uncommon, even in the absence of such a clinical picture, and must always be thought of when we are confronted by an uncomfortable baby more than 8 months of age. And it is during this time, too, that the tenderness of scurvy makes itself evident, and although this is not a very frequent finding, it may present a very puzzling problem. I have seen cases in which the subperiostial infiltration instead of appearing in the usual sites, along the lower epiphyses of the femur or about the wrists, occurred along the sacral bone and the ileum. I have also seen patients in which there was no sign of scurvy in the bones, and only the spongy gums, a few ecchymoses where a tight diaper had been pinned, and a hematuria gave evidence of the cause of the child's persistent crying.

. A baby with an intussuseption can hardly be classed with an uncomfortable child, but I have seen one instance in which a child of 14 months had been crying for a number of days before it began to vomit and before a physician was consulted. Of course, the child had presented the picture of apparent shock and the cry was not continuous, but spasmodic and repeated, and of a very sharp, ill-sustained character. Another child that was brought to the Lane clinic because it was unhappy was found to have an ischio-rectal abscess

which had been undiscovered. And it is not at all infrequent to find that older children, irritable and unhappy, are the victims of a rectum which partially prolapses and then retracts without being discovered.

Did time permit, there are many other conditions which might be cited as causes of discomfort. Those mentioned have been chosen in order to emphasize the need for a wide investigation when we are dealing with these crying infants. But before closing I must draw your attention to a very frequent and yet rarely recognized cause not only of distress, but of real disability on the part of infants during their second year; that is the inability properly to digest starch. A very large number of infants of this age brought to the pediatrist show a greater or less degree of starch indigestion which results in diarrhea or, in some instances, constipation with fermentation in the intestine that produces the protuberant belly so easily recognized. With this goes a high degree of acidity of the urine, not infrequently acetonuria, and as a result of this acetonuria, irritability, restlessness, broken sleep, a halt in or a loss of weight, and a condition that is alarming to the parents. These children suffer from pain about the umbilicus, and are often among the most uncomfortable little human beings with which we have to deal, and they are not only themselves uncomfortable, but because of their irritibility, they make everyone who comes into contact with them equally uncomfortable, and yet in the whole realm of therapeutic endeavor, there is no class of case that so readily responds to proper regimen and treatment. Most often, these children are called delicate, it is supposed that their appetites are so frail that they must be fed whenever they desire to eat, with a result that in their case, hunger never comes to the aid of digestion. They are the victims of mistaken kindness, forever nibbling at some food. A restriction to three meals a day, limitation of starch, or its presentation in an easily digestible form with the exhibition of diastase for the digestion and iron to remedy the anemia almost always present, will make these little ones rapidly comfortable and rosy.

In conclusion, much of the discomfort suffered by infants is needless and promptly remediable, but the many causes that may lead to distress must be kept in mind and a diagnosis reached by exclusion before the cause can be eliminated with certainty.

DEATH FOLLOWING AN ANT BITE.*

By T. C. EDWARDS, M. D., Salinas.

On April 18th, 1913, a little girl four years old living in the mountains ran into the house complaining that something was biting her. Upon investigation it was found that she had been bitten or stung upon the chest in several places by a large red ant.

The child was robust with an excellent family history, four great-grandparents still living. That afternoon she complained more or less of the bites but was about as usual the next day. Three or four days after she was bitten her mother noticed that the places where she was bitten had turned bluish and were about the size of a split pea. On April 24th, six days later, she vomited, complained of being cold and her mother noticed small spots coming on her body and extremities which later turned blue.

That night she was "feverish" and on the 25th she was brought to town. She had an axillary temperature of 103.8°, pulse 144, resp. 24. The temperature varied from 101° to 105°. Pulse never below 130, usually 150; resp. 30-40.

She was suffering from a purpura hemorrhagica of a very severe type. She was bleeding from the nose, mouth, stomach, bowels and urinary tract. She was given arsenic and iron, calcium chloride and gelatine with no improvement. I drew a few ounces of blood from the father's arm and gave a half ounce of serum hypodermically which was repeated twice. There was no blood in urine after second dose. She grew steadily worse, however, and died on April 30th. The last three days she was very sore and cried when moved. I find that there has been little written about ant bites and nothing about the venom.

Ants are somewhat like bees. The venom is secreted in the posterior part of the body and in those ants that have stings the venom is injected into the tissues with the sting. In those that use their mandibles as a means of attack the venom is deposited in the bites made by their mandibles, the ants doubling up so as to bring the posterior part of the body immediately over the injury and the venom is squirted into the cuts. In Costellani and Chambers' *Manuel of Tropical Medicine,* concerning tropical ants, we read, "The venom is well known to contain formic acid but there must be more than this in the venom of the tropical species, though nothing is known on the subject." Mention is made in the *London Lancet,* Jan. 10, 1914, of a practice among some tribes of indians of using the dried and mashed bodies of red ants to poison their arrows, but no mention is made of the character of the symptoms produced in those injured by these missiles. Mention is made of symptoms sometimes produced by tropical ants such as chill fever and sometimes paralysis. Reptiles and small animals are said to be killed by being bitten or stung by ants. A brood of young ducks was killed near where my patient lived by being bitten or stung on the feet. One of our prominent stock men who has interests in the Yuma Valley, Arizona, informs me that many suckling pigs are killed there by a large ant. Two letters from the Yuma Valley confirm this statement. The writers both say that the pigs sometimes die in a few hours, but usually live two or three days and finally die with the hind quarters paralyzed. One writer says these same ants destroy alfalfa and grain for a short distance around their holes. London purple, bisulphide of carbon and cyanide are used to kill these ants.

Dr. Margaret Hamilton Smyth of the State Hospital at Stockton reports a pet chameleon killed in a short time by eating a red ant. The symptoms were the same as in the pigs, viz., a paralysis of the hind quarters.

Not knowing of these symptoms I made no investigation to determine whether my little patient had any paralytic condition or not.

Dr. L. B. Bates, bacteriologist in the Ancon Hospital, Panama, has done some experimental

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.